Marine Corps Aviation Modernization

Discussion

In addition to the aviation re-capitalization programs, several significant aviation modernization programs have been initiated, or are underway, to restore and enhance the capabilities of existing aviation platforms. This modernization effort is significant to the Marine Corps' overall re-capitalization effort. It has allowed the use of use the current and enhanced capabilities to sustain a combat edge while the next generation of aircraft, weapon systems and munitions is developed. Vital to the Marine Corps aviation modernization effort is the initiative to remanufacture our fleet of aging AV-8 attack aircraft. Other important aviation modernization initiatives include the F/A-18A upgrade, the EA-6B upgrades, the CH-53E Service Life Extension Program (SLEP), the CH-46 Engine Reliability Program (ERIP), the AH-1W Night Targeting System (NTS), the Advanced Tactical Air Reconnaissance System (ATARS), Pioneer (UAV), and Aviation Command and Control Modernization. These efforts, and many others, are vital to ensuring a capable and potent Marine Corps in the future.

- ***The AV-8B Remanufacture Program*** upgrades day attack aircraft into a more capable radar/night attack variant. The wing and many original items are retained. Added to a new fuselage is a night attack avionics suite (NAVFLIR, digital moving map, color displays, NVG lighting) and a surplus APG-65 multi-mode radar from the F/A-18. The aircraft receives the more powerful and reliable Pegasus (408) engine and an additional 6,000 hours of airframe life for 80 percent of the cost of a new aircraft.

- ***The F/A-18A Upgrade,*** ECP-583 consists primarily of avionics and hardware upgrades, which allows the F/A-18A to process and utilize the updated versions of the F/A-18C software and accessories. The modified "A" aircraft will be compatible with a Lot XVII F/A-18C aircraft; an aircraft 8 years newer. This ECP will enable the "A" aircraft to employ all current and programmed future weapons. A large portion of this modification enhances commonality between the "A" and "C" aircraft, which reduces logistics footprint, pilot and maintenance training, solves obsolescence issues and to the operational commander it becomes a single point solution. The "A" model aircraft is expected to remain in the active inventory until the 2015 time frame.

❑ ***EA-6B Upgrades*** retain Marine Prowlers as an essential combat-proven part of the MAGTF as well as the joint force. The cornerstone of the modification, repair and upgrade plans is the Block 89A-weapon system upgrade. Block 89A includes ARC-210 radios (SINGARS/Havequick capable), Embedded Global Positioning System/Inertial Navigation System (EGI), and an enhanced AYK-14 mission computer. Block 89A is the baseline aircraft configuration for the next and last expected major weapon system upgrade for the Prowler, the ICAP 3. The ICAP 3-weapon system will be a major warfighting capability that improves the aircraft's receiver suite and jamming capabilities while also improving aircrew situational awareness and reducing lifecycle costs. As the EA-6B fleet begins to reach the end of its airframe service life the re-winging and upgrades are critical to extending the aircraft's viability through 2015. The Marine Corps is scheduled to receive 10 Block 89As in FY01 and 02 for a total of 20 aircraft. ICAP is scheduled for introduction in FY04.

❑ ***The CH-53E Service Life Extension Program (SLEP)*** is critical to sustain the Super Stallion as the premier heavy lift aircraft for the MAGTF warfighter through the year 2025 when a Joint Common Lift aircraft can be procured. The current fleet of aircraft begins to reach the end of its service life in the next decade. The SLEP is currently programmed in two phases. Phase I will maintain the air worthiness of the fleet by modifying the airframe in critical structural wear points, improving tail rotor drive-shaft components and removing and replacing older KAPTON wiring. Phase II goes beyond basic air worthiness improvements with upgrades of obsolete avionics, cockpit integration, internal and external cargo systems, safety and survivability components, and dynamic components.

❑ ***The CH-46E Engine Reliability Program (ERIP)*** is essential to keep the CH-46E a viable and supportable airframe throughout the Marine Aviation "Transformation" until its full replacement by the MV-22 Osprey. By replacing the T58-GE-16 engine core and accessories, ERIP will arrest the downward trend in engine health, increase engine reliability, and restore operational power margins while providing a significant reduction in fleet labor and support costs.

❑ ***The KC-130J*** will replace the Corps' aged fleet of active force KC-130F/R Aerial Refueler/Tactical Transport aircraft. Recent results from a Service Life Assessment Program (SLAP) have confirmed that the actual fatigue life remaining on the Corps' venerable fleet of KC-130F/R Aerial Refueler/Tactical Transports is significantly less than indicated by previous data from NAVAIR. Greater reliability and maintainability (14 of

15 KC-130F/R/T readiness degraders eliminated), coupled with lower operating and support costs, will result in lower life cycle costs for the KC-130J. In addition to the increased warfighting capability associated with the newer technology inherent in the KC-130J, the Marine Corps will realize the added benefit of a reduction in manpower required to operate and maintain a KC-130J fleet.

❑ ***The AH-1W Night Targeting System (NTS)*** includes forward looking infrared, low light television, laser designator/range finder, and an automatic boresighting and tracking system. This multi-faceted enhancement enables the AH-1W to conduct its mission on a 24 hour basis and under conditions of reduced visibility. This expands the AH-1W's warfighting capabilities by increasing detection, recognition, and identification ranges in most degraded weather conditions to include low light level conditions. The laser rangefinder enhances conventional weapons delivery and supporting arms coordination missions, and the laser designator provides autonomous weapons engagement capability for the Hellfire missile.

❑ ***The Advanced Tactical Airborne Reconnaissance System (ATARS)*** is designed for the F/A-18D to restore a manned airborne reconnaissance capability to the MAGTF. The ATARS incorporates multiple sensor capabilities including electro optical, infrared, and synthetic aperture radar. The man in the loop remains the strength of this system. ATARS equipped aircraft will carry all sensor capabilities simultaneously. This multi-sensor capability will be completely selectable by the aircrew in flight. Another significant capability of ATARS is its ability to digitally transmit collected data in near real time to ground receiving stations. This information can be provided to various information/intelligence systems for national exploitation via the Joint Service Imagery Processing System-Tactical Exploitation Group (JSIPS-TEG). Consequently, ATARS, with its significant capability, is poised to become a major contributor in the national imagery arsenal.

❑ ***The Pioneer System*** will be the Marine Corps' backbone Unmanned Aerial Vehicles (UAV) until a replacement is fielded. UAVs will grow in

importance as the capability of these futuristic machines is developed. The Marine Corps ultimately views a VTOL capable UAV as a possible end state platform for the flexibility necessary for OMFTS. The Tactical Control Station (TCS) remains central to developmental efforts. TCS will give the Corps a Ground Control Station (GCS) with tremendous growth potential as well as connectivity with the whole family of UAVs from tactical to the High Altitude Endurance UAVs, as well as intelligence nodes. The Dragon Drone, Dragon, Warrior, and BURRO are UAV concepts that the Marine Corps Warfighting Laboratory is experimenting with. These experiments will provide important concept of operations experience and significant data on emerging technologies such as airframes, power plants, data links, and recovery systems.

- ***The Common Aviation Command and Control System (CAC2S)*** will provide aviation command and control modernization by incrementally replacing all current Marine Aviation Command and Control Systems (MACCS). CAC2S will provide a system that is capable of plugging into the Joint/Combined environment and is rapidly deployable and horizontally employable. CAC2S will stress shipboard compatibility while retaining joint capability ashore. The Marine Corps is nearing completion of its fielding of the AN/TPS-59(V)3 radar. The AN/TPS-59 is the Marine Corps' three dimensional, long-range air surveillance radar. The victor-3 variant includes enhanced detection, tracking, and cueing of smaller radar cross section targets to include theater ballistic missile point-of-origin/point-of-impact information. The improved radar provides land based air surveillance for the Marine component of a naval force and is a contributing sensor to the Navy's Cooperative Engagement Capability. Marine Aviation Command and Control will provide the landward "eyes" for seabased shooters as well as engagement control for land-based systems, and radar intercepts for airborne platforms. CAC2S will contribute to a commander's ability to have full spectrum situational awareness. This will produce a Joint, common, continuous and unambiguous air picture with fire quality data. This capability will enhance early detection, classification, and identification of all tracks and provide defense-in-depth with 360 degree coverage.

Marine Corps Position

The Marine Corps continues to pursue new and innovative weapon systems improvements and modernization efforts such as the AV-8B remanufacture, F/A-18A upgrade, EA-6B upgrades, CH-53E SLEP, CH-46 ERIP, AH-1W NTS, ATARS, Pioneer UAV, and Aviation Command and Control Modernization to maintain its combat superiority and tactical relevance in the changing world.